Intel® Desktop Boards D845HV and D845WN for the Intel® Pentium® 4 Processor

Delivering the Ultimate SDRAM Experience

The Intel® Desktop Boards D845HV and D845WN deliver new platform options for the Intel® Pentium® 4 processor, with the value and reliability of SDRAM memory. Featuring the Intel® 845 chipset, these desktop boards are designed to support up to 3GB** of Single-Data-Rate (SDR) PC133 SDRAM memory, providing cost-effective, reliable solutions for the Pentium 4 processor in the new mPGA478-pin package.

Intel is firmly established as an industry leader in the development of groundbreaking desktop board technologies. Desktop Boards D845HV and D845WN continue this tradition by combining the Pentium 4 processor and SDRAM memory to provide the ultimate SDRAM experience.

Platform enhancements include:

- **Designed to Support up to 3GB** PC133 SDRAM** — the highest density SDRAM desktop boards available.

- **Ultra ATA/100** — the fastest IDE interface for transfers to storage devices.

- **Seven USB Ports** — leading support for multiple peripherals at the front and back panel.

- **Intel® Rapid BIOS Boot** — accelerates Power on Self Test (POST) for faster system access.

- **Instantly Available PC** (suspend-to-RAM) — enables advanced power saving features.

- **Intel® Active Monitor** — checks system temperatures, power supply voltages, and fan speeds.

Feature-rich Products for Maximum Flexibility

With desktop boards D845HV and D845WN, system integrators can now design and build custom configurations based on specific technology requirements, while maintaining the flexibility to alter or upgrade later. Each board offers the choice between either a Communications and Networking Riser (CNR) or Intel® PRO/100 Network Connection, using Intel® 82562ET integrated LAN. Three PCI slots on the Desktop Board D845HV (microATX) and six PCI slots on Desktop Board D845WN (ATX) allow further expansion of the boards' capabilities, and an AGP slot enables customized graphics solutions. Analog Devices* SoundMAX* with SPX audio delivers exceptional sound and the flexibility to upgrade to multi-channel playback using CNR cards. User satisfaction and system performance are enhanced through Intel® Rapid BIOS Boot, Ultra ATA/100 disk support, and up to seven USB ports.

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Intel® Desktop Board D845HV and D845WN Features and Benefits

Feature	Benefit
Support for the Intel® Pentium® 4 Processor	Supports 478-pin Pentium 4 processors in mPGA package and Intel® NetBurst™ microarchitecture, including a 400 MHz system bus
Intel® 845 chipset featuring support for single-data-rate (SDR) PC133 memory	High volume and cost optimized memory technology delivers additional Pentium 4 processor system SKUs and price points
Intel® Rapid BIOS Boot	Reduced boot time enables faster system access
AGP 4X/2X 1.5V connector	Supports the latest graphics technology
Three SDRAM DIMM sockets	Designed to support up to 3GB** of single-data-rate PC133 memory
Ultra ATA/100	Enables fastest IDE interface for transfers to storage devices
Three PCI slots (Desktop Board D845HV) or six PCI Slots (Desktop Board D845WN)	Expansion slots for custom system configurations and future add-in card upgrades
Seven USB ports	Two dual-stack rear connectors, header for two front panel USB connectors, and optional CNR connector
Communication and Networking Riser (CNR) support (optional)	Plug-and-play technology designed to support integrated LAN, HPNA, modem or audio cards for overall system cost savings and flexibility
Integrated Intel® PRO/100 network connection, utilizing Intel® 82562ET LAN (optional)	On-board 10/100Mbps Ethernet LAN connectivity
AD1885 AC'97 Audio with SoundMAX* with SPX and microphone pre-amplifier	Exceptional audio performance and excellent value
Instantly available PC (suspend-to-RAM)	Power-management mode reduces PC power consumption and provides immediate PC access using advanced wake-up logic
Hardware management ASIC	Allows remote monitoring of system conditions for lower total cost of ownership
Three-year limited warranty***	Expanded investment protection

Boxed Intel® Desktop Boards D845HV and D845WN Solution includes:

- Desktop Board
- ATX compliant I/O shield
- Retention mechanism for processor thermal solution
- Floppy and IDE cables
- AGP retention mechanism
- Board and back panel I/O layout stickers
- Quick Start Guide
- CD-ROM featuring:
  - Intel® Express Installer
  - Norton* Internet Security*
  - Intel® Active Monitor
  - SoundMAX* with SPX
  - RealPlayer* Basic and RealJukebox* Basic
  - NTI CD-Maker 2000*
  - Software Drivers
  - Product Guide
  - Desktop Board Three-year Limited Warranty***

Value-add Software Solutions

From e-Commerce to creating personal music libraries, business and personal users are driving demand for a variety of complex applications. To ensure that today's PCs are ready for the digital world, boxed Intel® desktop boards now come with a full suite of software including Norton* Internet Security* for virus protection and Internet security, NTI CD-Maker 2000* for creating full-featured CDs, SoundMAX* with SPX for robust audio functionality, RealPlayer* basic to enable streaming audio and video, and RealJukebox* basic for recording and listening to MP3 audio. The Intel® Express Installer allows integrators to quickly and efficiently install the necessary software from the CD.

In addition to the full software suite, boxed Intel Desktop Boards D845HV and D845WN are unique in that they include key system integration components. These include processor thermal solution and AGP retention mechanisms, IDE and floppy cables, back panel I/O shield, and configuration labels. And every boxed Intel desktop board is backed by a three-year limited warranty*** and comprehensive support that Intel customers rely on.

Processor

Processors Supported (via mPGA478 connector)	Intel® Pentium® 4 processors with Intel® NetBurst™ microarchitecture including a 400 MHz system bus in the mPGA478-pin package and supporting frequencies starting at 1.4 GHz

Chipset Options

Intel® 845 Chipset	Intel® 82845 Memory Controller Hub (MCH) with Accelerated Hub Architecture bus
	Intel 82801BA I/O Controller Hub (ICH2) with Accelerated Hub Architecture bus
	Intel 82802AB Firmware Hub (FWH)

Memory Controller Hub (MCH)

Designed to support up to 3GB** (w/512Mb technology) PC133 SDRAM memory

I/O Controller Hub (ICH2)

ICH2 I/O Controller Hub	Ultra ATA/66/100
	Ultra DMA/33
	Six PCI request-grant pairs for support of six PCI bus masters
I/O Features	Integrated super I/O LPC bus controller
	Six (Desktop Board D845WN) or three (Desktop Board D845HV) PCI local bus slots
	Communication and Networking Riser (CNR) (optional), shared with PCI slot
	Power management support for ACPI 1.0
	PC 99 and PC 99A compliance
USB	Integrated ICH2 controllers with an additional SIO hub
	- Four back panel ports (two dual stacks)
	- Two front panel ports (header requiring cable to front panel)
	- One port routed to CNR card (optional)

Firmware Hub

System BIOS	4Mb Flash EEPROM with Intel/AMI* BIOS featuring plug-and-play, IDE drive auto-configure
	Advanced configuration and power interface V1.0b, DMI 2.0, multilingual support
Intel® Rapid BIOS Boot	Optimized POST for faster access to PC from power-on

System Memory

Memory Capacity	Three 168-pin DIMM connectors supporting up to three double-sided DIMMS
Memory Type	Single Data Rate (SDR) PC133 SDRAM in 64Mb, 128Mb, 256Mb and 512Mb technologies
Memory Voltage	3.3 V

Hardware Management Features

Voltage and temperature sense

Fan-sensor inputs used to monitor fan activity

Wake-Up From Network

Wired for Management (WfM) 2.0 compliant

Support for system wake up using an add-in network interface card with remote wake-up capability or PCI

Expansion Capabilities

Three (Desktop Board D845HV) or six (Desktop Board D845WN) PCI bus add-in card connectors (PCI local bus Specification Revision 2.2)

One Communication and Networking Riser (CNR) connector shared with PCI slot 3 (Desktop Board D845HV) or PCI slot 6 (Desktop Board D845WN)

One 1.5V 4X/2X AGP port connector

Jumpers and Front Panel Connectors

Jumpers	Single configuration jumper design
	Jumper access for BIOS configuration mode
Front Panel Connector	Reset, HD LED, Power LEDs, power on/off, standby header, IR port, Aux LED

Mechanical

Board Style	Desktop Board D845HV – uATX 1.0 compliant board size
	Desktop Board D845WN – ATX 2.03 compliant board size
Board Size	Desktop Board D845HV – 9.6"x9.6"
	Desktop Board D845WN – 12.0"x9.6"
Baseboard Power Requirements	Desktop Board D845HV – ATX12V or SFX12V
	Desktop Board D845WN – ATX12V

Environment

Operating Temperature	0° C to +55° C
Storage Temperature	-40° C to +70° C

Regulations

Safety Regulations

U.S. and Canada	UL 1950 – CSA 950-95
U.S. and Canadian	recognition component marks
Europe	UL classified to IEC 950

EMI/RFI Regulations
Intended for use in systems meeting the following EMI/RFI regulations:

US	FCC Class B (DofC – Cover off testing)
Canada	IC Class B
Europe	EU Class B (Res, Com, Light Industry)
Japan	VCCI, Class B (ITE)

Power requirements vary. Complies with US CRF via EN55022 + 6db in system configurations with an open chassis and EU Directive 89/336/EEC and use via EN55022 and EN50082-1 in a representative chassis.

Complete Solutions in the Box

Intel desktop boards based on the Intel® 845 chipset deliver competitive price points and the option of two form factors. These desktop solutions include Ultra ATA/100, AC'97 Audio, up to seven USB ports, and the option of integrated LAN or CNR. The following Intel desktop board configurations feature the Intel 845 chipset:

D845HV	microATX, 1.5V 4X/2X AGP, AC'97 audio, 3-PCI slots and CNR
D845HVL	microATX, 1.5V 4X/2X AGP, AC'97 audio, 3-PCI slots and LAN
D845WN	ATX, 1.5V 4X/2X AGP, AC'97 audio, 6-PCI slots and CNR
D845WNL	ATX, 1.5V 4X/2X AGP, AC'97 audio, 6-PCI slots and LAN

Ordering Information—See Intel's Web site at www.intel.com

For the most current product information available, visit Intel's Web site at: developer.intel.com/design/motherbd/